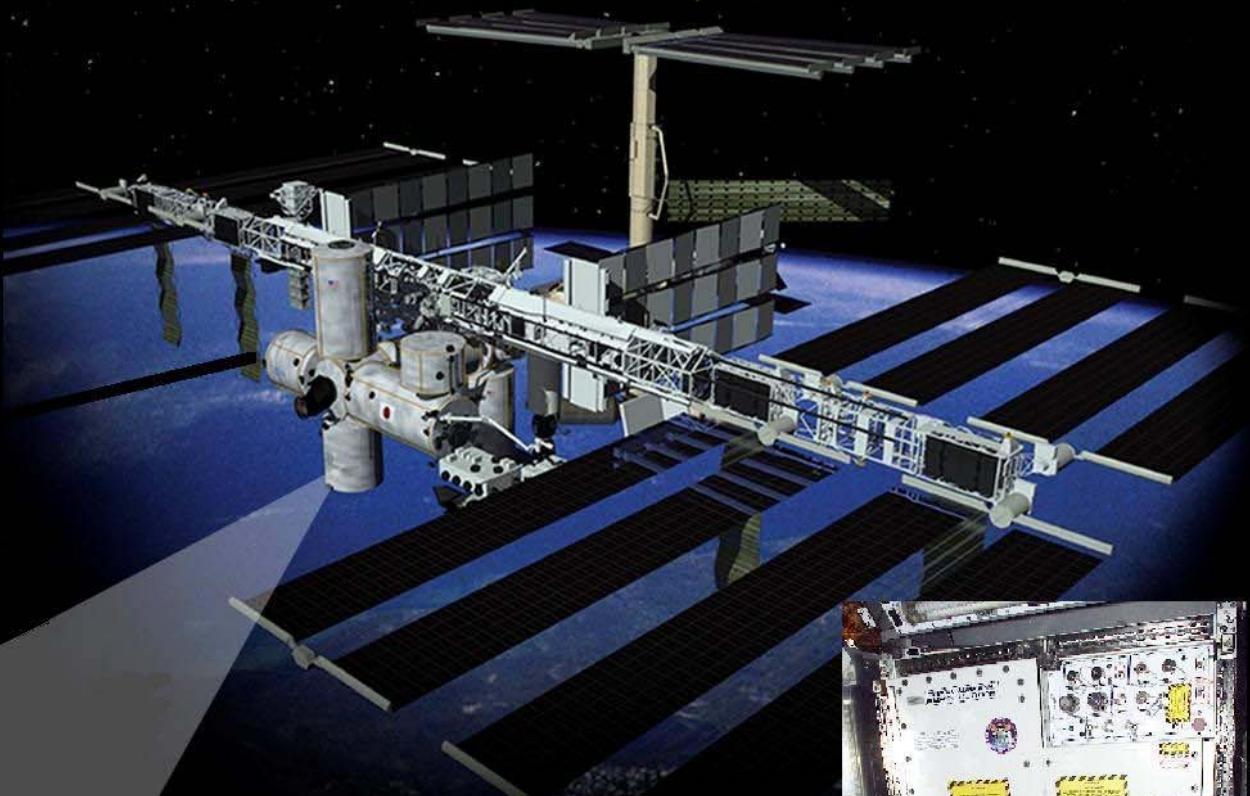


Window Observational Research Facility (WORF)



VP35/ISS Payloads Office
Marshall Space Flight Center

WORF Objectives/Description



Project Objectives

- The **Window Observational Research Facility (WORF)** Rack is a unique facility designed for use with the US Lab Destiny Module window.
- WORF will provide valuable resources for Earth Science payloads along with serving the purpose of protecting the lab window. The facility can be used for remote sensing instrumentation test and validation in a shirt sleeve environment. WORF will also provide a training platform for crewmembers to do orbital observations of other planetary bodies. WORF payloads will be able to conduct terrestrial studies utilizing the data collected from utilizing WORF and the lab window.



Description

- Originally manifested and loaded for ULF1 Flight (impacted by Columbia accident)— **Now planned for ISS Flight 19A (November 2009). Rack Hardware is at KSC “ready for flight”**
- Rack Facility using standard ISPR and EXPRESS heritage hardware
- Provides Power and Data interfaces for up to 5 payloads
- Provides avionics air cooling for instruments and crew comfort; Moderate Temperature Loop Water cooling for avionics
- Provides stable mounting platform and “darkroom” environment for payload instruments

WORF Overview



- Developed as an EXPRESS Rack derivative for simplified design process and utilization of common avionics
- 1 flight rack (KSC), 1 ground rack (JSC)
- Two Small Camera Brackets provided for payload use

Interfaces

- Seat Track locations in payload volume
- Payload Support Shelf -161 threaded inserts for payload mounting
- QD (Water)
- Power & Data Connectors
- SCSI, Data, Video Pass-through connectors
- Cables & Hoses

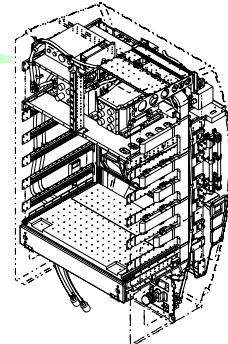
Resources

- 28Vdc Power (20 amp) – 5 locations
- Data (1553, Ethernet, Video) - 5 locations
- Moderate Temp Loop Cooling – 2 locations
- Avionics Air Cooling – Payload Volume
- SCSI, Data, Video Pass-through connectors
- Payload Support Computer

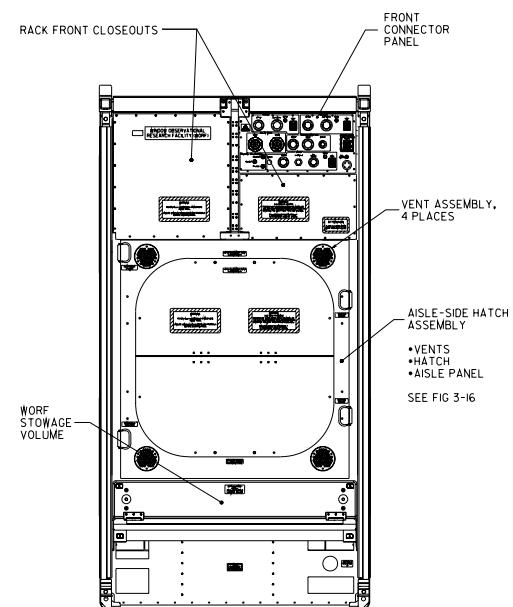
International Standard Payload Rack

Secondary Structure & Subsystems

~22.6cu.ft Payload Volume

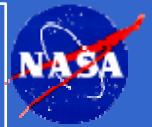


WORF Rack





WORF Payload Utilization



WORF Integration and Operations functions covered by ISS Payloads Office, prioritized within resource (budget, crew time, etc) constraints

- ✓ Payload Integration managed by MSFC for ISS Payloads Office
- ✓ Rack development is complete; Integration documentation available

For more information, contact:

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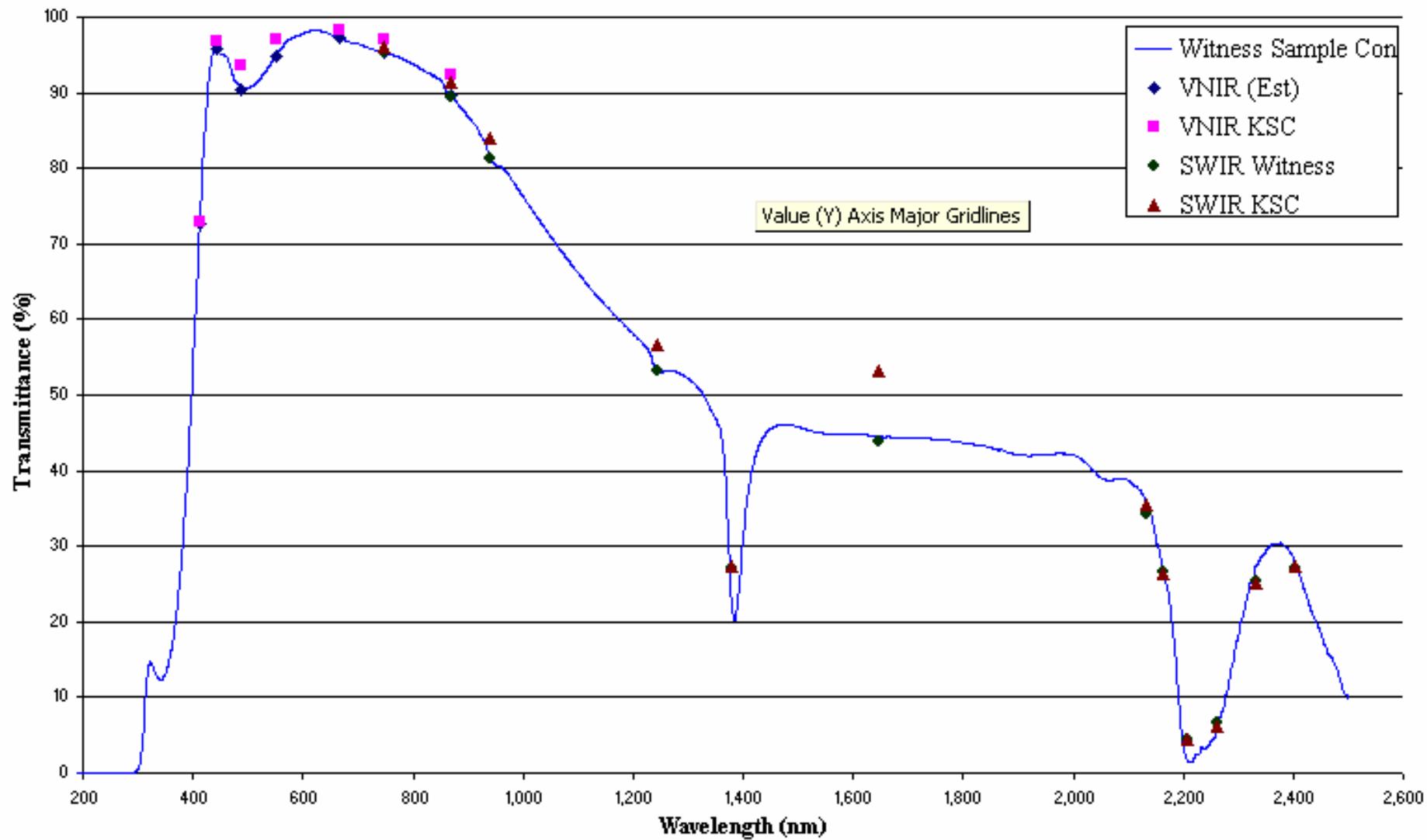
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Destiny Window



Destiny Window Port Transmittance
(Three 7940 fused silica panes)



Destiny Window



Cross Section of US Lab Research Window Mount

